

**ADDITIONAL FEES:**

A check in the amount of \$198.00 is enclosed to cover the cost of eleven (11) claims in excess of twenty (20) total. Should the check prove insufficient for any reason, authorization is hereby given to charge any such deficiency to our Deposit Account No. 01-0268.

**REMARKS**

In order to place this application in condition for a complete action on the merits, the specification has been suitably revised to correct informalities, to place it in better conformance with U.S. practice, and to provide cross-reference to International Application Ser. No. PCT/JP99/06292, filed November 11, 1999 claiming a priority date of November 11, 1999. A new abstract which more clearly reflects the invention to which the amended and new claims are directed has been substituted for the original abstract.

Original claims 1-9 have been amended to correct the improper form of the multiple dependent claims and in formal respects to improve the wording thereof. New claims 10-27 have been added to cover the subject matter of multiple dependent claims 5/1-8/1, 5/2-8/2, 5/3-8/3, 6/4-8/4, 7/5, 8/5 and 8/6, respectively. New claims 28-31 have been added to provide a fuller scope of coverage.

Attached hereto is a marked-up version of the changes made to the specification, abstract and claims by the current amendment. The attached pages i-viii are captioned **"VERSION WITH MARKINGS TO SHOWN CHANGES MADE."**

Early and favorable action on the merits are most respectfully requested.

Respectfully submitted,

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MAILING CERTIFICATE

I hereby certify that this correspondence is being deposited with the United States Postal Service as first-class mail in an envelope addressed to: Commissioner of Patents & Trademarks, Washington, D.C. 20231, on the date indicated below.

  
Bruce L. Adams

Signature

NOVEMBER 6, 2002

Date

"VERSION WITH MARKINGS TO SHOW CHANGES MADE"

IN THE ABSTRACT:

The original abstract has been replaced with the following new abstract:

A mechanical watch has a front wheel train mounted to undergo rotation. A control mechanism controls rotation of the front wheel train and has a balance for undergoing reciprocal rotational movement. A switch mechanism outputs an ON signal when a rotational angle of the balance exceeds a predetermined threshold angle and outputs an OFF signal when the rotational angle of the balance does not exceed the threshold angle. A balance rotational angle control mechanism applies a force to the balance to suppress rotation of the balance when the switch mechanism outputs the ON signal. A position detector for detecting a position of the mechanical watch is comprised of a case having patterns disposed on an inner surface of the case and a conductive fluid disposed in the case. The operation of the balance rotational angle control mechanism is controlled in accordance with the position of the mechanical watch detected by the position detector.

IN THE SPECIFICATION:

The following new heading and paragraph have been inserted after the Title of the Invention, before line 1:

Cross-Reference to Related Applications

This application is a U.S. national stage application of copending International Application Ser. No. PCT/JP99/06292, filed November 11, 1999 claiming a priority date of November 11, 1999, and published in a non-English language.

The following new heading has been inserted after the Title, before line 1 of page 1:

BACKGROUND OF THE INVENTION

Heading beginning at line 1 of page 1 has been amended as follows:

[TECHNICAL FIELD] Field of the Invention

Heading beginning at line 6 of page 1 has been amended as follows:

[BACKGROUND OF THE INVENTION] Background Information

Heading beginning at line 11 of page 11 has been amended as follows:

[DISCLOSURE OF THE INVENTION] SUMMARY OF THE INVENTION

Heading beginning at line 22 of page 19 has been amended as follows:

[BEST MODE FOR CARRYING OUT THE INVENTION] DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Heading beginning at line 8 of page 90 has been deleted:

[INDUSTRIAL APPLICABILITY]

IN THE CLAIMS:

Claims 1-9 have been amended as follows:

1. (Amended) A mechanical watch comprising:  
a spring for generating a rotational force;  
[composing a power source of the mechanical watch,]  
a front wheel train for undergoing rotation in  
accordance with the [which rotates by] rotational force [which  
is] generated by the [when the] spring; [is unwound and]  
an escape and governor control mechanism for  
controlling [the] rotation of the front wheel train, [and;]  
the escape and governor control mechanism having [comprising]

a balance for undergoing reciprocal rotational movement, [which repeats right and left turns alternately,] an escape wheel [&] and pinion [which rotates based on the] for undergoing rotation in accordance with rotation of the front wheel train, and a pallet fork [which controls the] for controlling rotation of the escape wheel [&] and pinion [based on the operation] in accordance with reciprocal rotational movement of the balance; [the mechanical watch comprising] a switch mechanism [(168, 168a, 168b) which output] for outputting an ON signal when [the] a rotational angle of the balance [(140)] exceeds a predetermined threshold value and for outputting an [outputs] OFF signal when the rotational angle of the balance [(140)] does not exceed the predetermined threshold value; a balance rotational angle control [controlling] mechanism for applying a force to the balance to suppress rotation of the balance [(140e, 180) which is arranged so as to apply force which suppresses the rotation of the balance (140) to the balance (140)] when the switch mechanism [(168, 168a, 168b)] outputs the ON signal; and a position detector for detecting [the] a position of the mechanical watch[;] and comprised of a case having a plurality of patterns disposed on an inner surface of the case and a conductive fluid disposed in the case, [the inventive mechanical watch being characterized in that] the operation of

[said] the balance rotational angle [controlling] control mechanism [(140e, 180) is] being controlled in accordance with a [based on the resultant] position of the mechanical watch detected by [said] the position detector. [; and said position detector comprising a case (610a) whose shape seen from the top is circular and whose shape seen from the side is elliptic, a plurality of patterns (A1 through E2) disposed on the inner surface of said case (610a) and conductive fluid (608) stored within said case (610a).]

2. (Amended) [The] A mechanical watch according to claim 1; wherein the case of the position detector has a circular top view and an oval side view. [as described in Claim 1, characterized in that said position detector comprises a case (620a) whose shape seen from the top is circular and whose shape seen from the side is elliptic, a plurality of patterns (A1 through F2) disposed on the inner surface of said case (620a) and conductive fluid (628) stored within said case (620a).]

3. (Amended) [The] A mechanical watch according to claim 1; wherein the case of the position detector has a spherical outer shape; and wherein the [as described in Claim 1, characterized in that said position detector comprises a case (630a) whose outer shape is spherical, a plurality of]

patterns [(A1 through D2)] are disposed concentrically on the inner surface of [said] the case [(630a) and conductive fluid (638) stored within said case (630a)].

4. (Amended) [The] A mechanical watch according to claim 1; wherein the case of the position detector has a circular top view. [as described in Claim 1, characterized in that said position detector comprises a case (640a) whose shape seen from the top is circular and whose sectional shape seen from the side is the shape of cocoon, a plurality of patterns (A1 through D2) disposed on the inner surface of said case (640a) and conductive fluid (648) stored within said case (640a).]

5. (Amended) [The] A mechanical watch according to claim 4; wherein the position detector further comprises an [as described in any one of Claims 1 through 4, characterized in that said position detector comprises] insulating fluid [(654, 664) stored within] disposed in the case.

6. (Amended) [The] A mechanical watch according to claim 5; wherein [as described in any one of Claims 1 through 5, characterized in that] the patterns of the position detector are disposed concentrically around the inner surface of the case in a [and the respective patterns are formed into the] circular or ring [ringed] shape.



7. (Amended) [The] A mechanical watch according to claim 6; further comprising a hair spring disposed in the balance; and wherein the [as described in any one of Claims 1 through 6, characterized in that said] switching mechanism [(168, 168a, 168b) is constructed so as to output] outputs an ON [signals] signal when [a] the hair spring [(140c) provided in the balance (140)] contacts [with a contact member (168a, 168b) composing] a switch lever of the switching mechanism.

8. (Amended) [The] A mechanical watch according to claim 7; wherein the [as described in any one of Claims 1 through 7, characterized in that said] balance rotational angle control mechanism [(140e, 180)] comprises a balance magnet [(140e) provided] disposed in the balance [(140)] and coils [(180, 180a, 180b, 180c) disposed so as to be able to exert magnetic force to the balance magnet (140e); said coils (180, 180a, 180b, 180c)] for applying [the] a magnetic force to the balance magnet [(140e)] when [said] the switching mechanism [(168, 168a, 168b)] outputs the ON signal to suppress [the] rotation of the balance [(140)] and for applying no magnetic force to the balance magnet [(140e)] when the [said] switching mechanism [(168, 168a, 168b)] outputs the OFF signal.

9. (Amended) [The] A mechanical watch according to claim 8; wherein the [as described in Claim 8, characterized in that said] position detector further comprises a plurality of resistors [(R1 through R6)] having different resistance values and each corresponding to a [provided so as to correspond to the] conductive state of a respective one of the patterns, [of said position detector and having different resistance values and] one of the resistors [(R1 through R6) is] being connected to [said] one of the coils [(180, 180a, 180b, 180c) based on the resultant] in accordance with the position of the mechanical watch detected by [said] the position detector.